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Dear Regulatory Team Members:

Enclosed please find the Final Dust Control Plan, Revision 1, Hunters Point Shipyard, San Francisco, California. Minor revisions to Sections 4.1, 4.6, and 5.1 have been included to clarify current work practices at the project site.

If you have any questions regarding the enclosed document, please contact Mr. Chris Yantos at (619) 532-0912, or Mr. Keith Forman at (619) 532-0913 at your earliest convenience.

Sincerely,

KEITH FORMAN
BRAC Environmental Coordinator
By direction of the Director

Enclosure: 1. Final, Dust Control Plan, Revision 1, Hunters Point Shipyard, San Francisco, California, November 2010

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CONTRACT NO. N62473-07-D-3211
CTO NO. 0018

FINAL

BASEWIDE DUST CONTROL PLAN
REVISION 1

November 29, 2010

DCN: ECSD-3211-0018-0002.R1

HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA

Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
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FINAL

BASEWIDE DUST CONTROL PLAN
REVISION 1
November 29, 2010

HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA

DCN: ECSD-3211-0018-0002.R1

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ABBREVIATIONS AND ACRONYMS

$\mu g/m^3$	micrograms per cubic meter
ALI	annual limit
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
Cal/OSHA	California Occupational Safety and Health Administration
CCR	*California Code of Regulations*
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
DAC	derived airborne concentration
DON	Department of the Navy
EPA	U.S. Environmental Protection Agency
ft^3/min	cubic feet per minute
HPS	Hunters Point Shipyard
L/min	liters per minute
mg/m^3	milligrams per cubic meter
mph	miles per hour
NIOSH	National Institute for Occupational Safety and Health
NOA	naturally occurring asbestos
PEL	permissible exposure limit
PESM	Project Environmental Safety Manager
PM_{10}	particulate matter smaller than 10 microns in diameter
QC	quality control
ROC	radionuclide of concern
SSHO	Site Safety and Health Officer
TCRA	time-critical removal action
TSP	total suspended particulates
TWA	time-weighted average

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1.0 INTRODUCTION

1.1 DUST CONTROL PLAN FOR TIME-CRITICAL REMOVAL ACTIONS

This Basewide Dust Control Plan was prepared for all work performed by contractors during the time-critical removal actions (TCRAs) at Hunters Point Shipyard (HPS) in San Francisco, California (Figure 1-1). This plan was developed to ensure that the Department of the Navy (DON) maintains a coordinated approach for dust control and air monitoring activities across multiple contracts. At a minimum, all contactors will be required to adhere to the requirements set forth in this document.

This document will be evaluated as new contracts are awarded to ensure that the dust mitigation requirements meet the substantive dust mitigation requirements presented in the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, *California Code of Regulations* (CCR) Title 17, Section 93105. Contractors may be required to submit addenda to address work activities not presented in this plan.

1.2 REGULATORY BASIS

The TCRAs at HPS are being conducted in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Regulatory oversight and guidance are provided by the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency, and the Regional Water Quality Control Board. The project areas are located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). However, as TCRAs under CERCLA, the projects are not required to have permits from the BAAQMD. Nevertheless, the projects need to meet the substantive aspects of BAAQMD air quality requirements.

This Basewide Dust Control Plan specifically identifies the steps that will be taken to reduce fugitive dust emissions during excavation, transportation of soil and debris, and installation/removal of construction site infrastructure. This plan describes measures to address the substantive requirements of the following applicable regulations:

- CCR Title 17, Section 93105 (e), ATCM for Construction Grading, Quarrying, and Surface Mining Operations – Requirements for Construction and Grading Operations – Areas Greater Than One Acre
- BAAQMD Regulation 6, Particulate Matter and Visible Emissions, 6-301 Ringelmann No. 1 Limitation, 6-302 Opacity Limitation, and 6-305 Visible Particles

1.3 REPORT ORGANIZATION

Section 2.0 of this Basewide Dust Control Plan provides site background and history. Section 3.0 describes potential sources of fugitive dust. Section 4.0 discusses control measures for dust generated by general construction activities. Section 5.0 describes air monitoring requirements. Section 6.0 presents references cited in this plan. Tables and figures follow the text.

2.0 BACKGROUND

2.1 SITE DESCRIPTION AND HISTORY

HPS is located in the City and County of San Francisco, California, on a long promontory in the southeastern part of San Francisco that extends east into San Francisco Bay (Figure 1-1). Presently, HPS includes 866 acres (420 acres on land and 446 acres under water). The land portion of HPS was purchased by the DON in 1939 and leased to Bethlehem Steel Corporation. At the start of World War II in 1941, the DON took possession of the property and operated it as a shipbuilding, repair, and maintenance facility until 1974. Throughout the 1940s, 1950s, and 1960s, the DON excavated the hills surrounding the shipyard, and used the resulting spoils along with available dredge material and engineered fill material to expand the shipyard's shoreline into San Francisco Bay. The DON deactivated HPS in 1974. From 1976 to 1986, the DON leased HPS to Triple A Machine Shop, Inc., a private ship repair company. In 1986, Triple A Machine Shop ceased operations at HPS, and the DON resumed occupancy through 1989.

Because of previous hazardous operations on the site, HPS was placed on the National Priorities List in 1989 as a Superfund site pursuant to CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986. HPS then came under the administrative jurisdiction of the Treasure Island Naval Station in April 1990.

In 1991, HPS was placed on the Navy's Base Realignment and Closure list, and its mission as a Navy shipyard ended in April 1994. Closure activities at HPS involve environmental remediation activities and making the property available for non-defense use. On March 31, 1994, control of HPS was transferred from the Treasure Island Naval Station to the Naval Facilities Engineering Command, Western Division (now Engineering Field Activity West) in San Bruno, California. In October 1999, Naval Facilities Engineering Command Southwest assumed management of HPS.

2.2 SCOPE OF WORK

The DON has various active contracts at HPS. The contracts cover the removal and remediation of potentially radiologically impacted sanitary sewer and storm drain lines, radiological and nonradiological waste disposal, long-term monitoring, site investigations, and other remedial actions.

In general, work activities may consist of one or more of the following: removal of asphalt pavement, geophysical investigations and utility clearance of excavation areas, establishment of soil and debris stockpile areas, excavation of impacted soil and piping, backfill of excavations, building demolition, soil/groundwater sampling, and site restoration.

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3.0 POTENTIAL SOURCES OF FUGITIVE DUST

Site activities have the potential to generate air emissions in the form of fugitive dust. Possible sources of emissions include the following activities:

- Construction Traffic – Movement of construction equipment around the construction areas is capable of creating construction emissions in excavated or cleared areas.
- Site Preparation – Asphalt and vegetation removal will increase the potential for fugitive dust emissions through wind erosion.
- Excavation – Removal of soil from the ground and loading it either onto screening pads or into waiting vehicles could cause fugitive dust emissions.
- Material Stockpiles – Soil that has been cleared of radioactivity may be stockpiled prior to being used as backfill or shipped to appropriate disposal facilities. Soil will be loaded into trucks for final disposal. Fugitive emissions during stockpiling and truck loading, as well as wind erosion, are possible.
- Building Demolition – Demolition of buildings may produce fugitive dust emissions. Structures will be evaluated for lead and asbestos contamination by a California-certified consultant. Based on the resulting data, site-specific Demolition Plans will be developed that describe the controls necessary to minimize fugitive dust.
- Transportation of Solid Bulk Material – If material is left uncovered, fugitive emissions could occur.
- Site Restoration – Backfilling and revegetating/restoration of the excavated areas may produce fugitive dust emissions.
- Recycling – Asphalt and concrete are typically recycled on-site, which may produce fugitive dust emissions.

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4.0 GENERAL CONSTRUCTION DUST CONTROL METHODS

Control methods for fugitive dust are described for the following emissions generated from the construction activities at the project sites:

- Dust entrained during on-site travel on paved and unpaved surfaces
- Dust entrained during travel to/from HPS
- Dust entrained during vegetation removal, excavation, material screening, use of conveyors, backfill, and final grading at the construction site
- Dust entrained during soil stockpiling, and loading and unloading operations
- Wind erosion of areas disturbed during construction activities
- Vehicle emissions associated with construction equipment

4.1 CONSTRUCTION TRAFFIC

4.1.1 Track-out Prevention

Track-out of loose materials will be controlled by use of tire-cleaning rumble grid plates at the access point from project sites to the paved road to prevent track-out of mud or loose soils onto roadways. These track-out prevention control points will be established at the primary HPS site access and egress points. The locations of the track-out prevention control points are shown on Figure 4-1. To ensure that the tires are free from mud or loose soils prior to leaving the site, the bulk-loaded trucks and commercial vehicles will be required to pass over a gravel pad (at least 50 consecutive feet in length from the intersection with the paved public road) and over the rumble grid plates where the soil residue from the tires will be removed.

Any visible track-out onto a paved road where vehicles exit the HPS project site will be removed by wet sweeping at the end of the work day or at least once per day.

All bulk-loaded trucks used to transport naturally occurring asbestos (NOA)-containing material off-site will be cleaned by a wheel wash station before leaving the site.

4.1.2 Traffic Control

Fugitive dust emissions from construction traffic traveling on unpaved surfaces will be controlled through the following mitigation methods:

- Actively used unpaved roads in the project construction sites will be watered every 2 hours or frequently enough to maintain adequate wetness. The frequency of watering can be reduced or eliminated during periods of precipitation. Watering frequency may be increased during hotter periods or windy conditions.

- No vehicle will exceed 15 miles per hour (mph) within the construction site and 5 mph in work areas.

The following mitigation measures will be followed for fugitive dust emissions from construction traffic traveling on paved streets:

- Bulk-loaded trucks used for transportation of soil and other heavy earth-moving equipment will not be allowed to exit the construction sites, except through one of the track-out prevention control points.
- Construction areas adjacent to any paved roadway will be treated with best management practices, as specified in the Stormwater Pollution Prevention Plan.
- Roadways within the site will be swept with a wet sweeper or washed down to remove soils. The accumulated soils will be routinely removed from non-traffic areas such as gutters and curbs.
- No vehicle will exceed 15 mph within the construction site and 5 mph in work areas.

If any of the preceding mitigation methods fail to properly control fugitive dust emissions, one or more of the following reasonably available control measures will be applied:

- Unpaved active portions of the construction sites will be watered or treated with dust control solutions to minimize windblown dust and dust generated by vehicle traffic.
- Paved portions of the construction sites will be cleaned more frequently to control windblown dust and dust generated by vehicle traffic. Water may also be applied to the paved roads if necessary.
- Gravel, recrushed/recycled asphalt, or other material of low silt content (less than 5 percent) will be applied to a depth of 3 or more inches, if necessary. Serpentine-containing material will not be used for this purpose.
- Vehicle trips will be reduced if necessary.

4.2 SITE PREPARATION AND REMEDIATION ACTIVITIES

Fugitive dust emissions from site preparation, excavation, loading, spreading, stockpiling, backfill, and compaction activities will be controlled using the following methods:

- During asphalt removal, surface soils will be pre-wetted in the area to be removed prior to commencing the activity. Soil moisture content will be sufficiently maintained to minimize fugitive dust creation.
- All unpaved, inactive portions of the work area and inactive storage piles that are inactive for more than 7 days will be watered or chemical soil stabilizer applied to minimize fugitive dust creation.

4.3 EXCAVATION ACTIVITIES

Fugitive dust emissions from excavation and loading activities will be controlled using the following methods:

- Soil will be wetted prior to excavation activities to reduce dust migration. Additional water will be added during active excavation, material handling, and loading on an as-needed basis. Active excavation areas will be wetted every 2 hours during periods of dry weather or in windy conditions. A water truck or water buffalo shall be dedicated to excavation and removal operations.
- The area subject to excavation and other construction activity will be limited at any one time. A chemical soil stabilizer will be applied to on-site storage piles of soil or sand.
- The height from which excavated soil is dropped either to trucks, stockpiles, or pads will be minimized.
- Trucks moving potentially radiologically impacted soils will be loaded over a plastic liner to assist in the cleanup of any soil from the loading process.
- Trucks shall be equipped with tarping systems to cover loads during soil transport.
- Truck traffic shall be minimized to the shortest haul routes from the work areas, screening yard, and stockpile areas.
- Chemical soil stabilizer will be applied in sufficient quantities to disturbed areas so as to create a stabilized surface.
- Backfill materials will be wetted on an as-needed basis to maintain moisture. Loader buckets will be emptied slowly and drop height from loader bucket minimized. A water truck or water buffalo will be dedicated to backfilling operations.
- A chemical soil stabilizer will be applied to backfill material and storage piles when not actively handled (i.e., no activity in 7 days).

4.4 MATERIAL STOCKPILES

Fugitive dust emissions from soil storage piles will be controlled by using a temporary cover, water, or a chemical soil stabilizer.

4.5 BUILDING DEMOLITION

Structures will be evaluated for lead and asbestos contamination by a California-certified consultant. Based on the resulting data, site-specific Demolition Plans will be developed that describe the controls necessary to minimize fugitive dust.

4.6 BULK SOLID MATERIAL TRANSPORT

- All trucks used to transport import solid bulk material to HPS will be covered (tarped) or the material will be loaded in such a manner that the material does not touch the front, back, or sides of the cargo compartment at any point less than 6 inches from the top and that no point of the load extends above the top of the cargo compartment.
- All trucks used to transport solid bulk material from the HPS project site will be covered (tarped for non-radiologically impacted material or hard-top containers/bins used for radiologically impacted material) prior to leaving the site.
- Vehicles will be checked to ensure that they are tarped or covers are closed to prevent any spillage, and any spillage material on the shelf, on exterior surfaces of the cargo compartment, or on wheels will be removed prior to leaving the site.
- Trucks used for solid bulk material transport will be inspected to ensure that no spillage can occur from holes or other openings in the cargo compartment.
- Bulk loaded trucks will exit the HPS project site via an established track-out control point.

4.7 POST-CONSTRUCTION STABILIZATION OF DISTURBED AREAS

Unpaved areas disturbed during excavation, grading, and/or construction activities will be covered with one of the following to reduce dust generation on the site:

- An approved vegetative cover
- Surface swales to control stormwater
- Coverage with a minimum of 3 inches of non-asbestos-containing material
- Hard surface paving

4.8 RECYCLING

Non-impacted asphalt and concrete are typically recycled on-site and may produce fugitive dust emissions. Fugitive dust emissions from recycling activities will be controlled using the following methods:

- Asphalt and concrete will be wetted prior to handling to reduce dust migration. A water truck or water buffalo shall be dedicated to this activity.
- Additional water will be added during active grinding, sorting, material handling, and loading, as needed, to control fugitive dust.
- The height from which crushed material is dropped either to trucks, stockpiles, or pads will be minimized.
- Trucks shall be equipped with tarping systems to cover loads during transport.

- Truck traffic shall be minimized to the shortest haul routes from the work areas, screening yard, and stockpile areas.
- A chemical soil stabilizer will be applied in sufficient quantities to stockpiles so as to create a stabilized surface.

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5.0 AIR MONITORING

Air monitoring is performed to ensure worker and community safety in accordance with NIOSH approved air sampling methodology. Figure 5-1 presents a map of known sensitive community receptors within 1 mile of HPS. Three types of air monitoring are conducted during construction activities:

- Air quality monitoring (total suspended particulates [TSP], manganese, lead, particulate matter smaller than 10 microns in diameter [PM_{10}], and asbestos)
- Radionuclides of concern (ROCs) air monitoring
- Personnel monitoring

During prolonged precipitation events (greater than 8 hours of precipitation in a 24-hour period), the air monitoring units will not be operated. An air monitoring station or individual units being inoperable shall not preclude construction activities at the associated work site.

5.1 AIR QUALITY MONITORING

The air monitoring for HPS will include ambient air quality monitoring stations that will be established to perform monitoring during field activities. Air samples will be collected at the monitoring stations and will be analyzed for the airborne chemicals of concern, which include TSP, manganese, lead, PM_{10}, and asbestos. The air quality sampling will be used to assess the status of air quality compliance and to evaluate modifications to basewide activities in the event of compliance concerns. The meteorological data for the general work areas, specifically wind speed and direction, will be used to identify the most appropriate locations for the air monitoring stations. Air samplers and monitoring stations will be located upwind and downwind of work areas, using wind direction data, and in the most practical locations.

Analytical results for TSP will be compared with a standard of 0.5 milligram per cubic meter (mg/m^3) (level chosen to minimize overall permissible dust release from site), 200 micrograms per cubic meter ($\mu g/m^3$) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]), 50 $\mu g/m^3$ time-weighted average (TWA) 30 days for lead (Cal/OSHA), and 5 mg/m^3 for PM_{10} (California Ambient Air Quality Standard). If HPS activities are the cause of exceedances, additional control measures may be considered.

During prolonged precipitation events (greater than 8 hours of precipitation in a 24-hour period), the air monitoring units will not be operated. An air monitoring station or individual units being inoperable shall not preclude construction activities at the associated work site.

5.1.1 Monitoring Site Locations

Air monitoring stations will be installed to collect air samples upwind and downwind of work areas for the duration of the activities. The predominant wind direction at HPS is from the west. Established locations of air monitoring stations are shown on Figure 4-1. Air monitoring is performed to estimate and assess the impact of the field activities. The locations of the air monitoring stations to be used will be determined based on the prevailing wind direction and work activities and may be modified as needed. Monitoring stations will not be moved while they are sampling. Radiological air monitoring will be conducted both upwind and downwind of the excavations and in the immediate vicinity of each excavation site in accordance with the applicable radiation work permit requirements and the Hunters Point Shipyard Standard Operating Procedure, HPO-Tt-008, Air Sampling and Sample Analysis (TtEC 2005). In addition, a windsock will be set up at each site to show wind direction.

Each monitoring station will include three different monitoring systems: one each for TSP (that will be analyzed for manganese and lead), PM_{10}, and asbestos. Descriptions of these samplers are provided below. Sampling frequency and monitoring methods are listed in Table 5-1.

5.1.2 Total Suspended Particulates, Manganese, and Lead

TSP will be sampled with a high-volume (39 to 60 cubic feet per minute [ft^3/min]) air sampler in accordance with EPA's reference sampling method for TSP, described in Title 40 *Code of Federal Regulations* (CFR), Part 50, Subpart B. Each sample will be collected on a filter over the course of a period not to exceed 54 hours; the filter is then weighed to determine the amount of TSP collected. Once the filter weight has been determined, the sample will be analyzed for manganese in accordance with one of the IO-3 methods identified in EPA's Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air (EPA 1999) and lead in accordance with a modified EPA Method 12. The equipment specifications and sampling procedures will comply with the specifications provided in the regulations for the sampler, filter, accuracy, calibration, and quality assurances.

The flow of the high-volume air sampler will be properly calibrated to establish traceability of the field measurement. Calibrations shall follow the guidelines specified in 40 CFR, Part 50, Section 9.3, and Section 2.6 of the EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods (EPA 1998).

Field logs should be used to properly record information after collecting the samples. Appropriate field data, such as date, time, sample identification, calibration data, sample location, ambient temperature and pressure, and any additional information or observations that could influence analyses of the results, will be entered on the field logs.

5.1.3 PM_{10}

PM_{10} will be sampled in accordance with EPA's reference sampling method for PM_{10}, described in 40 CFR 50, Subpart J. Each sample be collected on a filter over a period not to exceed 54 hours; the filter is then weighed to determine the amount of PM_{10} collected.

5.1.4 Asbestos

Asbestos will be sampled and analyzed in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 7400, from the NIOSH Manual of Analytical Methods (NIOSH 1994). Method 7400 requires that samples be collected on three-piece cellulose ester filters fitted with conductive cowlings at a sampling rate of between 0.5 liter per minute (L/min) and 16 L/min. Each sample will be collected over a period not to exceed 54 hours.

5.2 AIR SAMPLING FOR RADIONUCLIDES OF CONCERN

As specified in the Base-wide Radiological Work Plan (TtEC 2007), airborne radioactivity monitoring (continuous or grab samples) will be conducted during the course of work. To control occupational exposures, establish personal protective equipment, and determine respiratory protection requirements, monitoring and trending for airborne radioactive material will be performed as necessary. Each ROC, as specified in 10 CFR 20, Appendix B, has a derived airborne concentration (DAC) value. DAC is defined as the concentration in air that will result in an intake of 1 annual limit (ALI) if breathed for a working year under high working conditions (inhalation rate of 1.2 cubic meters of air per hour). ALI is the derived limit for the quantity of radioactive material intake into the body of a worker by inhalation or ingestion in a year.

Engineered controls will be developed in conjunction with the Radiological Affairs Support Office. They will be implemented if required to maintain airborne concentrations below 10 percent of the applicable DAC value for the ROCs at the sites. Table 5-2 shows the ROCs and their respective DAC values.

5.3 PERSONNEL MONITORING

The Site Safety and Health Officer (SSHO) will conduct monitoring to ensure that each site worker is adequately protected. Site monitoring and sampling includes real-time air monitoring and perimeter monitoring. In consultation with the Project Environmental Safety Manager (PESM), the SSHO will determine if personal or addition perimeter monitoring is required to evaluate the potential for personnel exposure. All air quality monitoring results that exceed the Cal/OSHA PELs (asbestos – 0.1 fiber/cubic centimeter, PM_{10} – 5,000 $\mu g/m^3$, TSP – 10 mg/m^3, manganese – 200 $\mu g/m^3$, lead – 50 $\mu g/m^3$) will be immediately reported to the PESM, who will evaluate the results. If the evaluation finds elevated results, personnel monitoring may be

required. Depending on the elevated results, addition sampling may be conducted for asbestos, particulate matter, or lead.

5.4 QUALITY CONTROL PROCEDURES

A quality control (QC) program will be implemented to ensure that collected data are accurate and precise in order to effectively characterize both the magnitude and variations in ambient conditions at the monitoring stations. Complete documentation of the results of routine operations and QC aspects of the program, including all log notes, calibration forms, and certifications, will be maintained on file. Key elements of the routine field QC program will include:

- Routine visits to each sampling station over the sampling period to check sampler pump flow rates, verify operation and sample conditions, and note any ambient conditions that could affect the accuracy or representativeness of the sample
- Calibration of the sampling pumps and flow devices
- Routine preventive maintenance of all equipment components

The analytical laboratory performing the sample analyses will establish a QC program that will also ensure the accuracy of the data as the data are being analyzed. Key elements of the routine QC procedures implemented during the sample analyses will include analysis of laboratory blanks and spikes and calibration of the analytical instruments, as specified in the appropriate methodology.

Dust control activities will be documented during construction activities and included in the Daily Contractor Production Reports. Available air data will be submitted monthly to the DON for distribution to interested parties and will be posted online to the Base Realignment and Closure Program Management Office web page at:

- http://www.bracpmo.navy.mil/basepage.aspx?baseid=45&state=California&name=hps

6.0 REFERENCES

EPA (U.S. Environmental Protection Agency). 1998. Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods.

————————. 1999. Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air. EPA/625/R-96/010a. June.

NIOSH (National Institute for Occupational Safety and Health). 1994. NIOSH Manual of Analytical Methods. Method 7400. August.

TtEC (Tetra Tech EC, Inc.). 2005. Standard Operating Procedure PO-TtFW-008, Air Sampling and Sample Analysis.

————————. 2007. Final Base-wide Radiological Work Plan, Revision 1, Hunters Point Shipyard, San Francisco, California. October 5.

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TABLES

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TABLE 5-1

SAMPLING FREQUENCY AND MONITORING METHODS

Test Scenario	Type of Analysis	Monitoring Method	Frequency
Excavation and soil handling (upwind and downwind)	TSP	40 CFR, Part 50, Subpart B Analysis Method IO-3 (Mn) Analysis Method 12 (Pb)	1 sample per workday 2–3 samples per workweek
	PM_{10}	40 CFR, Part 50, Subpart J	1 sample per workday 2–3 samples per workweek
	Asbestos	NIOSH Method 7400	1 sample per workday 2–3 samples per workweek
	ROCs	HPO-TtFW-008*	1 sample per workday 2–3 samples per workweek
Backfill and site restoration (upwind and downwind)	TSP	40 CFR, Part 50, Subpart B Analysis Method IO-3 (Mn) Analysis Method 12 (Pb)	1 sample per workday 2–3 samples per workweek
	PM_{10}	40 CFR, Part 50, Subpart J	1 sample per workday 2–3 samples per workweek
	Asbestos	NIOSH Method 7400	1 sample per workday 2–3 samples per workweek
	ROCs	HPO-TtFW-008*	1 sample per workday 2–3 samples per workweek

Notes:

* PO-TtFW-008, Air Sampling and Sample Analysis (TtEC 2005), is a standard operating procedure used for radiological air sampling activities supporting Hunters Point Shipyard field projects.

Abbreviations and Acronyms:

CFR – Code of Federal Regulations
Mn – manganese
NIOSH – National Institute for Occupational Safety and Health
Pb – lead
PM_{10} – particulate matter smaller than 10 microns in diameter
ROC – radionuclide of concern
TSP – total suspended particulates

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TABLE 5-2

RADIONUCLIDE AIRBORNE CONCENTRATION GUIDELINES

Radionuclide	Worker*	
	DAC (μCi/mL)	10% DAC (μCi/mL)
Radium-226	3.0E-10	3.0E-11
Strontium-90	2.0E-9	2.0E-10
Cesium-137	6.0E-8	6.0E-9

Notes:

* The guideline values were determined using the NRC's 10 CFR, Part 20, Appendix B.

Abbreviations and Acronyms:

μCi/mL – microcuries per milliliter (activity)
CFR – *Code of Federal Regulations*
DAC – derived airborne concentration
NRC – Nuclear Regulatory Commission

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FIGURES

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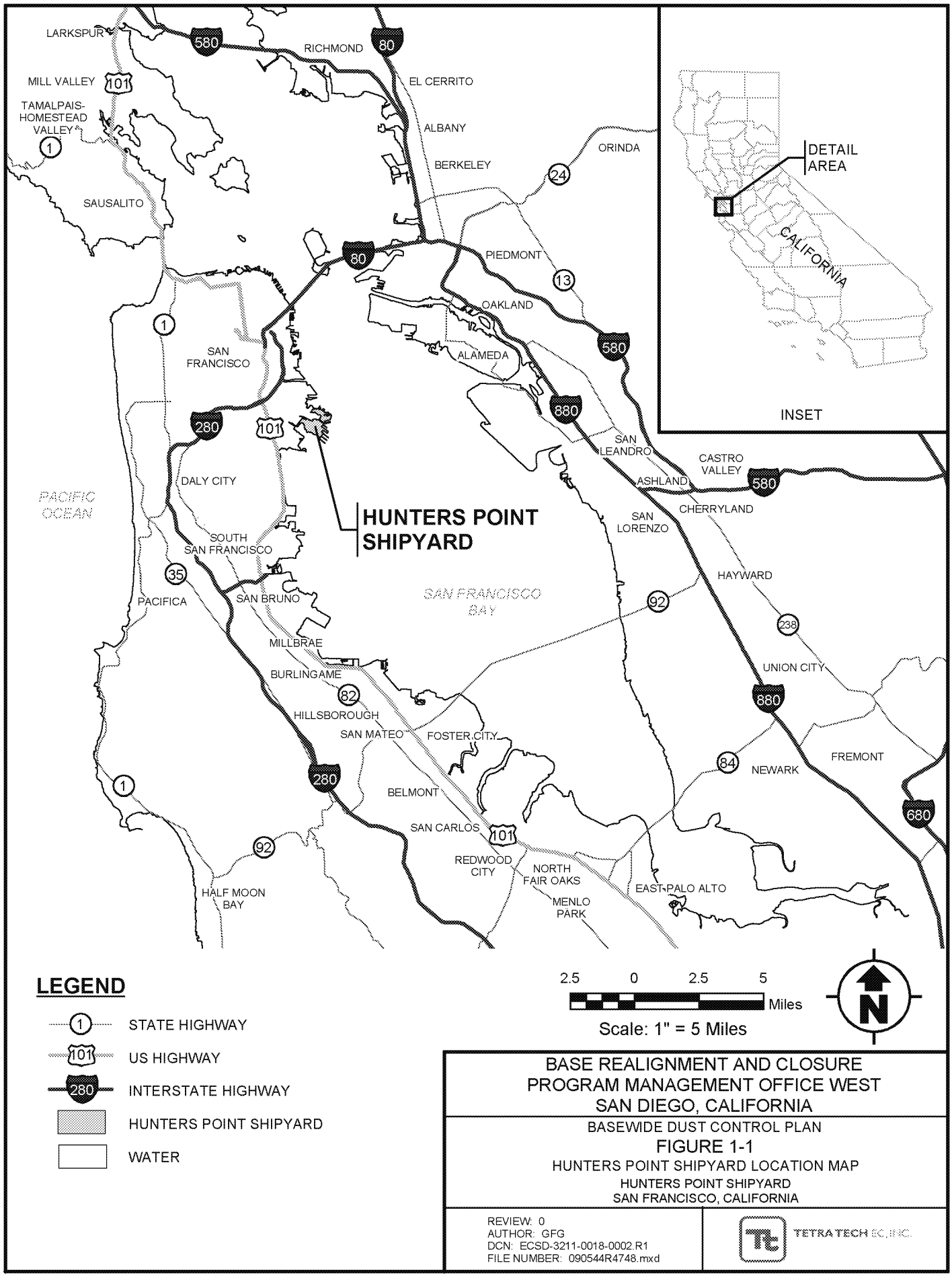

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

BASEWIDE DUST CONTROL PLAN

FIGURE 1-1

HUNTERS POINT SHIPYARD LOCATION MAP

HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA

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DCN: ECSD-3211-0018-0002.R1
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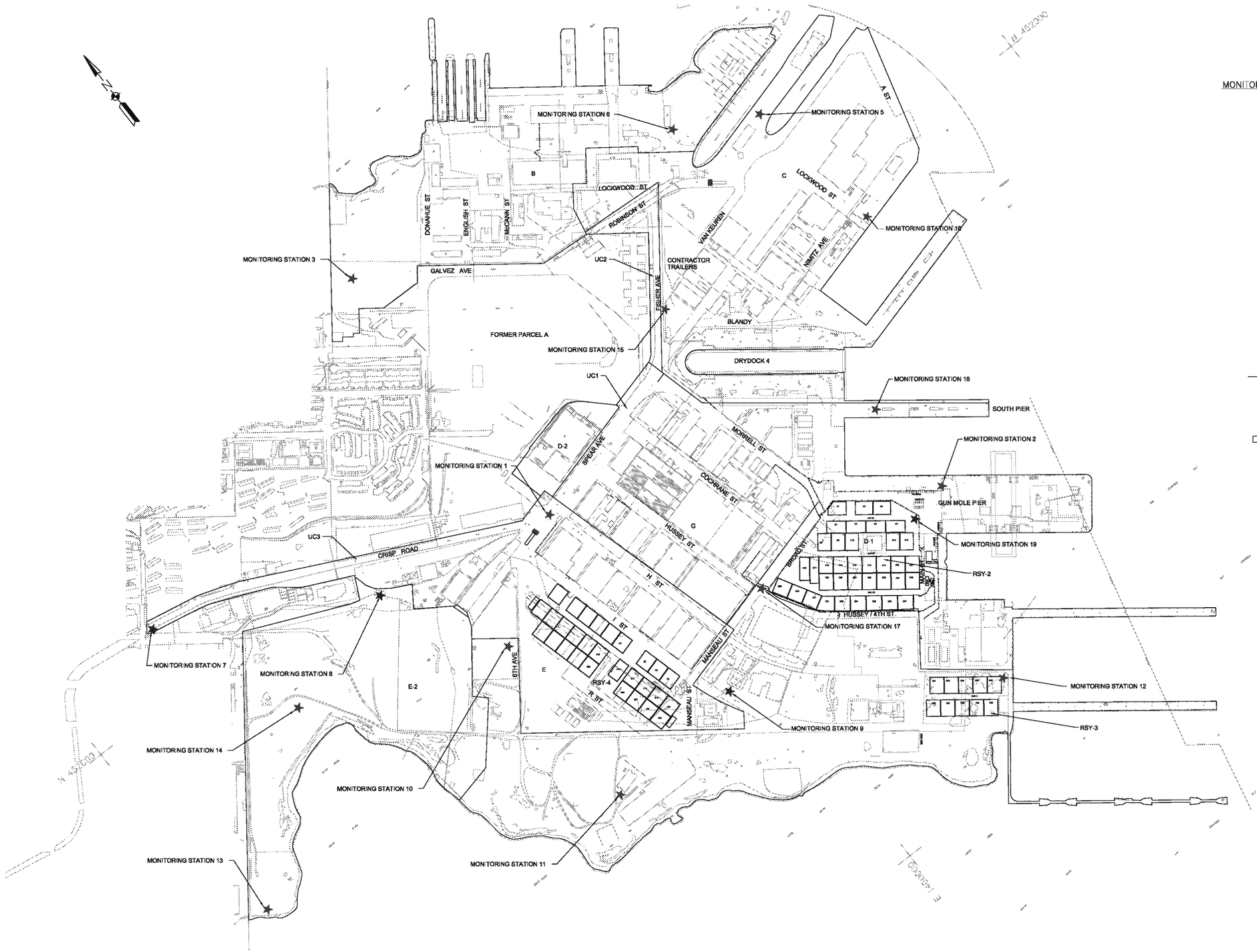

LEGEND

MONITOR STATION	LOCATION	IN USE
1	– PARCEL E–1 –	NO
2	– PARCEL D –	NO
3	– PARCEL B –	NO
4	– NOT USED –	NO
5	– PARCEL C –	NO
6	– PARCEL B –	NO
7	– PARCEL E–1 –	YES
8	– PARCEL E–1 –	YES
9	– PARCEL E–1 –	YES
10	– PARCEL E–1 –	NO
11	– PARCEL E–1 –	NO
12	– PARCEL E–1 –	NO
13	– PARCEL E–2 –	NO
14	– PARCEL E–2 –	NO
15	– PARCEL G –	NO
16	– PARCEL C –	NO
17	– PARCEL D–1 –	YES
18	– PARCEL D–1 –	YES
19	– PARCEL D–1 –	YES

MONITORING STATION LOCATION (TETRA TECH CONTROLLED)

MONITORING STATION LOCATION (NOT IN USE OR OPERATED BY OTHERS)

PARCEL BOUNDARY

LOCATION OF 10' X 16' RUMBLE STRIP

LOCATION OF 10' X 50' GRAVEL CLEAN–OUT PAD

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

BASEWIDE DUST CONTROL PLAN

FIGURE 4-1

DUST CONTROL TRACK-OUT POINTS
AND AIR MONITORING LOCATIONS

HUNTERS POINT SHIPYARD, SAN FRANCISCO, CA

REVISION: 0
AUTHOR: A. CRABTREE
PROJECT NO:
FILE: SEE BELOW

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LEGEND

- FIRE DEPARTMENT
- HUMAN SERVICES
- JUVENILE PROBATION
- MAYOR/COMMUNITY DEVELOPMENT
- MENTAL HEALTH
- POLICE STATION
- PUBLIC HEALTH
- PUBLIC LIBRARY
- PUBLIC WORKS
- REAL ESTATE/ADMINISTRATIVE SERVICES
- RECREATION AND PARK
- SAN FRANCISCO COMMUNITY COLLEGE DISTRICT
- SAN FRANCISCO PRIVATE SCHOOL
- SAN FRANCISCO UNIFIED SCHOOL DISTRICT
- SHERIFF
- RADIUS CENTERPOINT
- ROAD
- HIGHWAY
- INTERSTATE HIGHWAY
- RAILROAD
- PARK
- WATER
- SAN FRANCISCO PUBLIC LAND
- QUARTER MILE BUFFER
- ONE MILE BUFFER
- HUNTERS POINT SHIPYARD BOUNDARY

SOURCE:

WIND DIRECTION
AS PER SOUTHWEST DIVISION NAVAL FACILITIES ENGINEERING COMMAND WIND ROSE PLOTS OF HUNTERS POINT SHIPYARD 08/06/00 - 10/12/00

SAN FRANCISCO FACILITIES LOCATIONS
RETRIEVED FROM THE CITY AND COUNTY OF SAN FRANCISCO ONLINE WEBSITE (SFGIS DATA DOWNLOAD)

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

BASEWIDE DUST CONTROL PLAN

FIGURE 5-1

HUNTERS POINT POTENTIAL COMMUNITY RECEPTORS AND BUFFER AREAS

HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA

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